Reprinted from *The Indian Medical Gazette*, Vol. LIII.
(No. 8, Aug. 1918.)

# DISCUSSION ON THE TREATMENT OF MALARIA.

(*Continued from p.* 249, *July*, 1918, *I. M. G.*)

(Additional remarks.)

By Colonel Sir RONALD ROSS, K.C.B., K.C.M.G.,
*Consultant in Malaria, War Office.*

15th March, 1918.

1. I have recently received a very interesting document from the D. M. S., Salonika, giving the results of enquiries on the treatment of malaria which he has made among a large number of Medical Officers serving there, all of whom have constantly been treating malaria cases and supervising quinine prophylaxis. I am allowed to give the following brief summary of the opinions expressed by these Medical Officers on various points at issue:—

A. The Medical Officers were asked for their opinion regarding the value of 10 grains of quinine given twice a week as a prophylactic measure. Out of 111 Officers who have expressed definite opinions, 2 stated that this dosage of prophylactic quinine is of great value; 2 stated that it is of definite value; 10 stated that it is of some value; 16 that it is of very little value; 72 that it is of no value; and 7 that it is of no value and objectionable, because it renders the parasites immune and masks the symptoms. One Officer said it was of use against benign tertian and not against malignant

22500308994

tertian. Five Officers thought that the minimum dose of any prophylactic value should be 10 grains daily. In addition to these 111 reports, 4 Officers confessed to being uncertain. Thus out of the 111 Officers, 71 per cent. considered that 10 grains of quinine given twice a week as a prophylactic measure is of no value or is objectionable.

B. The Officers were next asked to give their opinion regarding the optimum dosage for treating relapses of malaria in Regimental Aid Posts, where patients are under treatment for a period not exceeding 3 days (patients whose fever exceeds that period being sent further back). Out of 111 Officers who expressed definite opinions, 1 advised 80 grains of quinine daily; 6 advised 60 grains daily; 13 advised 45 to 50 grains daily; 14 advised 35 to 40 grains daily; 70 advised 30 grains daily with subsidiary treatment; 4 advised 20 grains daily; and 3 objected to any optimum dosage, but thought that each case must be treated on its merits. Thus the large majority of the Officers, namely 63 per cent., are in favour of 30 grains daily, though 4 advised an increase of 45 grains daily if necessary, and 1 advised 15 grains every 4 hours until the temperature falls.

C. Asked what is the optimum dosage for recurrent cases of malaria now doing duty after they have been kept in Regimental Aid Posts for a few days—107 Officers report as follows: Nine recommended the complete stoppage of quinine unless relapses occur, the treatment being confined to arsenic, iron and other tonics; 73 recommend that fixed doses of quinine should be given for periods varying up to $3\frac{1}{2}$ months; and of these 73 Officers, 26 recommend 10 grains daily, 21 recommend 20 grains daily, and 26 recommend 30 grains daily. But 25 Officers recommend graduated courses under which the quinine dosage is reduced as the course progresses. Three Officers recommend 30 grains daily for 10 days, followed by 20 grains daily for another 10 days; 10 Officers favour 30 grains daily for 1 to 3 weeks, followed by 20 grains daily for 1 to 3 weeks, and 10 grains for the remainder of the course of 3 to $3\frac{1}{2}$ months. Five Officers recommend 10–30 grains for 2 to 4 weeks; 25 Officers suggest various weeks, and then 5 grains daily. The remainder prefer other lines of treatment.

D. Asked what is the optimum dosage for recurrent cases of malaria on return from Hospital, out of 105 Officers, 16 recommend the complete stoppage of quinine unless relapses occur. Sixty-five Officers advise the same daily dose of quinine given for various periods. Of these, 33 advise 10 grains daily for from 1 to $3\frac{1}{2}$ months; 12 advise 20 grains daily for similar periods, and 16 advise 30 grains daily. Thirteen Officers advise various courses of treatment in which there is a gradual reduction of the quinine as the course progresses.

2. Subsidiary treatment is of course recommended by many Officers; others suggest the continuance of the quinine until the end of the malaria season; and others make numerous suggestions which cannot be included in a summary like this.

### The Treatment of Malaria.

1. Apparently the best treatment for old cases of malaria which has yet been in use in the Southern, Eastern and Aldershot Commands, and London District (at least to judge by the small number of cases which are known to have relapsed after the treatment was given), has been treatment C. 17 [recorded in my interim report on the treatment of malaria, finally dated 4th March, 1918, 24 General Number (A.M.D. 2.) (6198)], devised by Captain Meredith Harrison, R.A.M.C., in charge of the malaria cases at the Connaught Hospital, Aldershot. This treatment was used by him between the 10th July and the 16th October, 1917, for 49 chronic cases of malaria, mostly of benign tertian, and mostly arrived from Salonika. Of these, only 5 had relapsed after the cessation of treatment in October until the end of February, 1918, when I inspected a large number of cases. It may be added that three-fourths of these cases have been examined since their original treatment at the Connaught Hospital once a week as regards their clinical condition, their blood, and their weight; and as most cases of malaria in the Aldershot Command are closely in touch with the Connaught Hospital I think that the number of cases which relapsed (given above) is accurate. The percentage of cases relapsing as given by these figures is therefore only 10·2 per cent. The time which elapsed between the end of the treatment and the beginning of the relapse (in the 5 cases which did

relapse) varied from 16 to 72 days, and averaged 34·5 days. Captain Harrison reports that with this treatment the fever was reduced within from 12 to 24 hours, and that no asexual parasites could be found after 48 hours. The effect of the treatment as regards general improvement of health was good. The treatment was well borne by the patients, except for deafness and tinnitus, and there was very little vomiting; but the patients always object to stopping in bed for 12 days.

2. The treatment was as follows:—The patient is put to bed for 12 days and given daily the following treatment for all this period, namely, grains 15 of the bi-hydrochloride of quinine intramuscularly in each deltoid muscle, together with grains 10 of hydrochloride of quinine in mistura anticachexia No. 1, thrice daily—totalling 60 grains of quinine daily for the 12 days. After this the patient is allowed up and is given mistura anticachexia No. 2 four times a day, that is 60 grains of quinine daily by the mouth, this treatment being continued for 3 days. After this the patient is given mistura anticachexia No. 3 four times daily for 14 days —that is, 20 grains of quinine daily, the patient being allowed to do light work all this time. Captain Meredith Harrison's prescriptions for mistura anticachexia No. 1, No. 2, No. 3, are appended below.

3. It will be useful if medical officers in charge of malaria cases would follow this treatment exactly as laid down by Captain Meredith Harrison and report the results as regards relapses to me.

## CONNAUGHT HOSPITAL, ALDERSHOT.

### For the Treatment of Malaria.

*Mistura Anticachexia No. 1.*

℞

| | |
|---|---|
| Quinine Hydrochlorid. ... ... | gr. x. |
| Tinct. Ferr. Perchlorid. ... ... | m. v. |
| Liq. Strychnia B. P. ... ... | m. v. |
| Liq. Arsenic. Hydrochlor. ... ... | m. v. |
| Acid Nitrohydrochloric dil. ... ... | m. v. |
| Magnes. Sulphat. ... .. ... | dr. ss. |
| Syrup Tolu ... ... ... | dr. ss. |
| Glycerine . . ... ... | m. x. |
| Aqua, *ad* ... . . . | oz. 1 |

*Sig.*—For a dose: to be given, as directed, after food.

*Mistura Anticachexia No. 2.*

As No. 1, but add—

| | | | |
|---|---|---|---|
| Quinine Hydrochlorid. | ... | ... | gr v. |
| Acid Nitrohydrochloric dil. | ... | ... | m. v. |

to the dose.

*Mistura Anticachexia No. 3*

As No. 1, but reduce—

| | | | |
|---|---|---|---|
| Quinine Hydrochlorid. | ... | ... | gr. v. |
| Acid Nitrohydrochloric dil. | ... | ... | m. v. |

in each dose.

R. MEREDITH HARRISON,
T. Capt., R.A.M.C.,
*M. O. in charge of Malaria.*

Connaught Hospital,
31st December, 1917.

WELLCOME INSTITUTE
LIBRARY
Coll. welMOmec
Coll. pam
No. WC 750
1918
R82d